



Ponds

STRUCTURAL MAINTENANCE

What is a dry pond?

Dry detention ponds are basins whose outlets have been designed to detain stormwater runoff to allow particles and associated pollutants to settle. Unlike wet ponds, these facilities do not have a large permanent pool of water. However, they are often designed with small pools within the basin.

What is a wet pond?

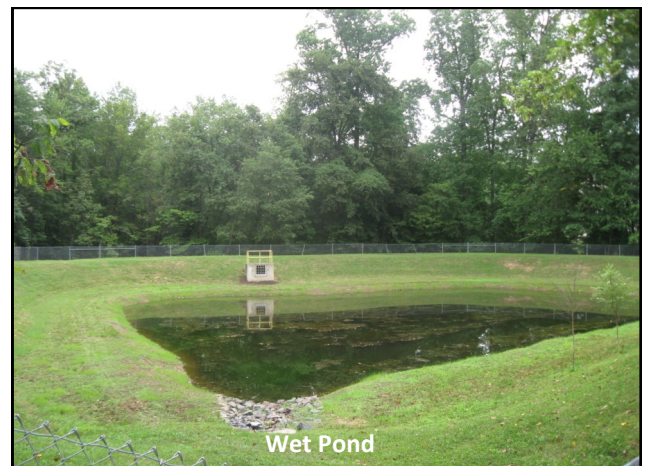
Wet ponds are constructed basins that have a permanent pool of water throughout the year. Ponds treat incoming stormwater runoff by allowing particles to settle and biological plants to take up nutrients. The primary removal mechanism is settling as stormwater runoff resides in the pool and nutrient uptake also occurs through biological activity.

How do ponds work?

Stormwater ponds detain runoff and allow the pollutants carried by runoff to settle out. Runoff is conveyed to a stormwater pond by a combination of overland flow, ditches, swales and underground pipes. Once runoff reaches the pond, the sediment settles to the bottom. The water that entered as polluted runoff leaves the pond gradually through an outfall structure, resulting in cleaner water entering the receiving waterway .



Dry Pond



Wet Pond

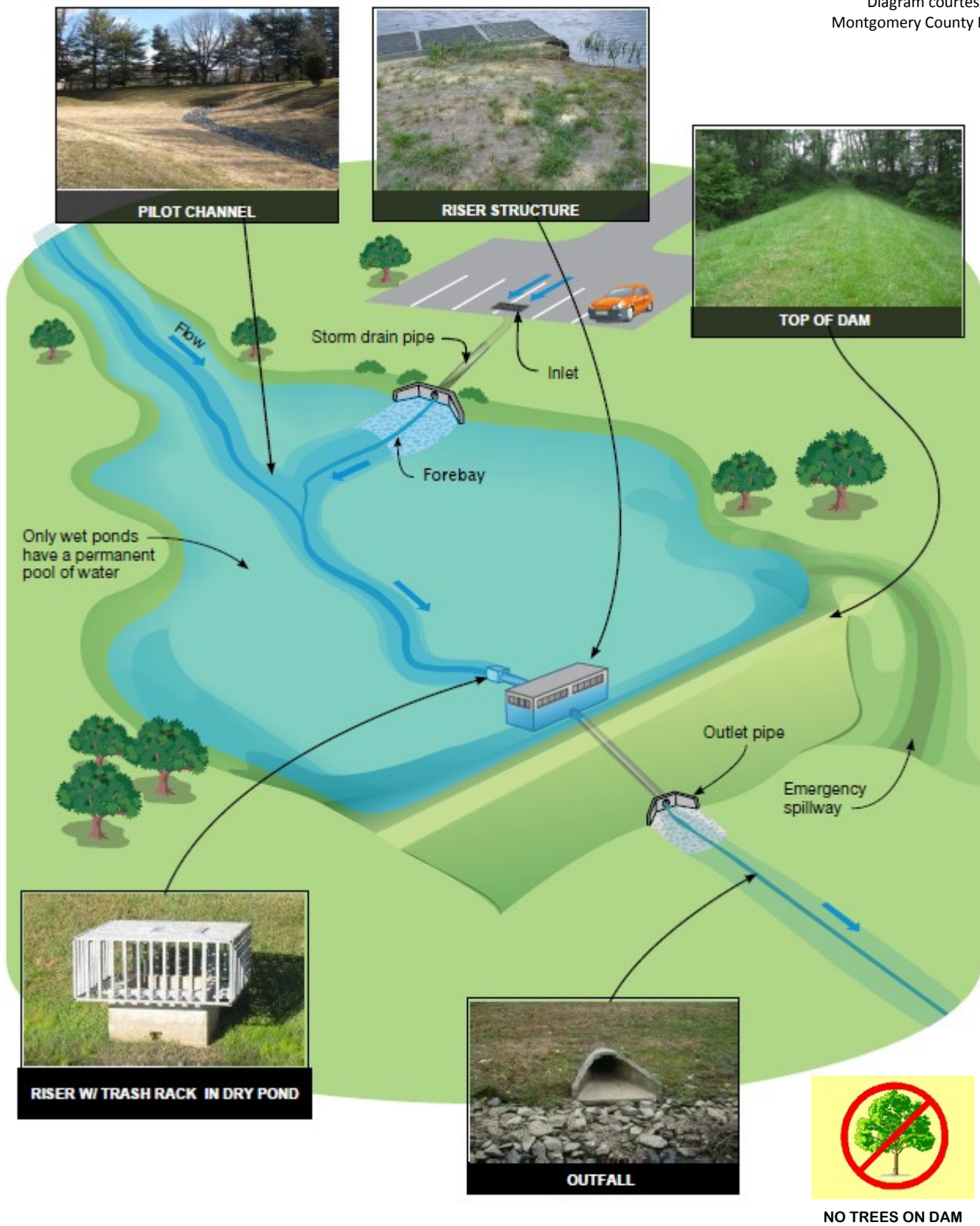
Why are ponds important?

- Trap sediments
- Minimize the adverse effects that impervious surfaces have on watersheds
- Help to make our waters fishable and swimmable
- Improve the quality of the Chesapeake Bay

Rainwater flows across surfaces, picking up pollutants such as oil, pesticides, animal waste and trash, conveying it through storm drains that lead directly to the streams eventually into the Chesapeake Bay.

POND DIAGRAM

Diagram courtesy of
Montgomery County DEP



POND MAINTENANCE BASICS

It is recommended that structural maintenance should be performed by experienced contractors who have attended Harford County's Stormwater Workshop. No one should remove control structure manholes or enter the control structure without proper training, and certification for confined space entry. Entering a confined space without meeting these requirements may be a violation of State law.



Storm drain obstruction



Dewatering pipe obstruction



Mower ruts



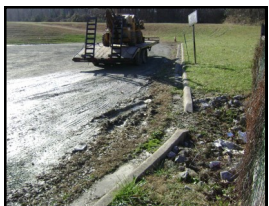
Dewatering stone at base overgrown



Gate mis-aligned



Rusted trash rack



Sediment accumulation at curb opening



Riser scaling



Sparse stabilization



Downstream dam slope not mowed to the toe



Facility is overgrown



Vegetation in fencing

POND MAINTENANCE BASICS

These conditions require immediate attention and repair. If left unrepaired, these conditions could lead into more serious issues such as a breach of the dam; hence, financial costs to repair will be extensive.



Animal burrow on upstream dam slope



Trees on dam



Slump on upstream dam slope



Sliding on upstream dam slope

If you notice any of the below conditions which indicate failure of your stormwater pond, please contact Harford County Bureau of Stormwater Management at 410.638.3563.



Hole(s) in barrel pipe



Sliding on upstream dam slope near principal spillway due to piping



Pipe separation



Seepage thru pipe joint



Damaged or broken riser structure



Barrel pipe exposed from severe piping

SEDIMENT FOREBAY MAINTENANCE BASICS

A sediment forebay is a small pool located near the inlet of a storm basin or other stormwater management facility designed as initial storage areas to trap and settle out sediment and heavy pollutants before they reach the main pond. Sediment forebays act as a pretreatment feature on a stormwater pond and can greatly reduce the overall pond maintenance requirements. The systems are simple devices adding a water quality benefit beyond what is accomplished by the pond.

Sediment forebays also make pond maintenance easier and less costly by trapping sediment in one small area where it is easily removed, and preventing sediment buildup in the rest of the facility. They can extend the life of the stormwater pond.



Sparsely stabilized areas within forebay causing sliding



Rip rap berm clogged with vegetation



Vegetation overgrowth at storm drain outfall into forebay



Sediment accumulation at discharge of dewatering pipe from forebay to pond

Recommended Schedule For Typical Maintenance

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Basic Maintenance*	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Monitoring	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Grass Cutting				✓	✓	✓			✓			
Trash Removal	~ As Needed ~											
Lime									✓			
Fertilize			✓						✓			

* Basic maintenance includes but not limited to those items listed on pages 3 and 4.

** NOTE: Refer to the approved stormwater management plan for associated maintenance schedule.

Remember to lime and fertilize to maintain good grass growth in your facility.

POND MAINTENANCE SUMMARY

Preventative Maintenance

Performing preventative maintenance regularly will prevent long term damage and reduce costs. It is recommended inspections be performed bi-annually and after major storm events.

The structural maintenance problems listed on page 3 thru 5 are some of the items that should be monitored. Contact a contractor if any problems are noted and have the repairs made immediately.

NOTE: Grass should be mowed frequently during the growing season and all trash/debris should be picked up.

All beneficial users of the stormwater facility can help by:

- Know the pollutant sources on your property and try to eliminate them.
- Keep all inlets and storm drains free and clear of debris that lead into the stormwater facility.
- Educate your children regarding the safety around stormwater facilities.

Who is responsible for the maintenance?

As the property owner, YOU are responsible for all maintenance. Most developments have an association which provide for the maintenance and repair of the stormwater facility.

How often does Harford County perform maintenance inspections and how will I know what repairs are needed?

Harford County is required to perform an inspection every 3 years. If maintenance issues are found in need of repair, an inspection report will detail those items to be addressed within 30 days from the date of the notice.

Harford County is here to guide you in the maintenance of your facility. Workshop classes are offered for those who want to learn more about the inspecting and repairing of stormwater facilities. Please contact our office for further information.



Harford County can answer your questions and provide additional guidance on maintaining your pond.

Email: cjoyce@harfordcountymd.gov * Telephone: 410.638.3563
Website: www.harfordcountymd.gov/dpw/engineering/WaterResources/

